Chromium Manufacturing History

• Isaac Tyson Jr. developed chromium manufacturing in Baltimore in early 19th century

• Tyson built Baltimore Works in ~1845 and sold to Mutual Chemical in 1908

• Largest ore producer in world between 1827 and 1850

• Allied bought Mutual Chemical in 1954

• Allied and Honeywell merged in 1999
Baltimore Inner Harbor – Historical Aerial Photograph
Honeywell Proprietary

Chrome Production

- 1845 – Operations Began
- 1985 – Plant Closed

Remediation

- 1989 – Consent Decree with EPA and MDE
- 1990 to 1999 – Design and Implementation of Remedy Under Supervision of Regulators
- Ongoing – Operation & Maintenance
Harbor Point – A Model Remediation

- $110 million cleanup lauded as model of EPA land revitalization program
- About 8,000 samples below government criteria
- Remedy planned for redevelopment
- Consent Decree requirements ensure protection of human health and environment during remedy and redevelopment
Extensive Environmental Cleanup Paves Way for Development

Remedy Supervised by Federal and State Agencies
1. Groundwater contained beneath site
2. Pumping maintains groundwater level lower than surrounding harbor water
3. Multi-layer cap prevents rainwater infiltration
4. Building, paved areas, and landscaping above cap

= Groundwater flow direction
Before Remedy Implementation

Diagram showing the underground layout with labels for Old Bulkhead, Baltimore Chrome Works, PATAPSCO RIVER, Sand and fill, Sand, silt/clay and gravel, Organic silt and clay, Groundwater flow, and Bedrock.
After Remedy Implementation

- Barrier Wall
- Outboard Embankment
- Multi-Layered Cap
- Inlet
- Barrier Wall
- Organic silt and clay
- Monitoring Well OP-9
- Groundwater flow
- Sand and fill
- Sand, silt/clay and gravel
- Extraction Well
- Bedrock

Honeywell Proprietary
Groundwater Monitoring Locations

- OP-11
- OP-9
- OP-2
- OP-3
- OP-7
- OP-5
- OP-4
- NWM-27

Barrier Wall
Chromium Concentrations in Groundwater Monitoring Well NWM-27

Sample Event

Concentration (ppm)

Surface Water Monitoring Locations

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Surface Water Monitoring Results

Most samples were below the detection limit for total chromium.